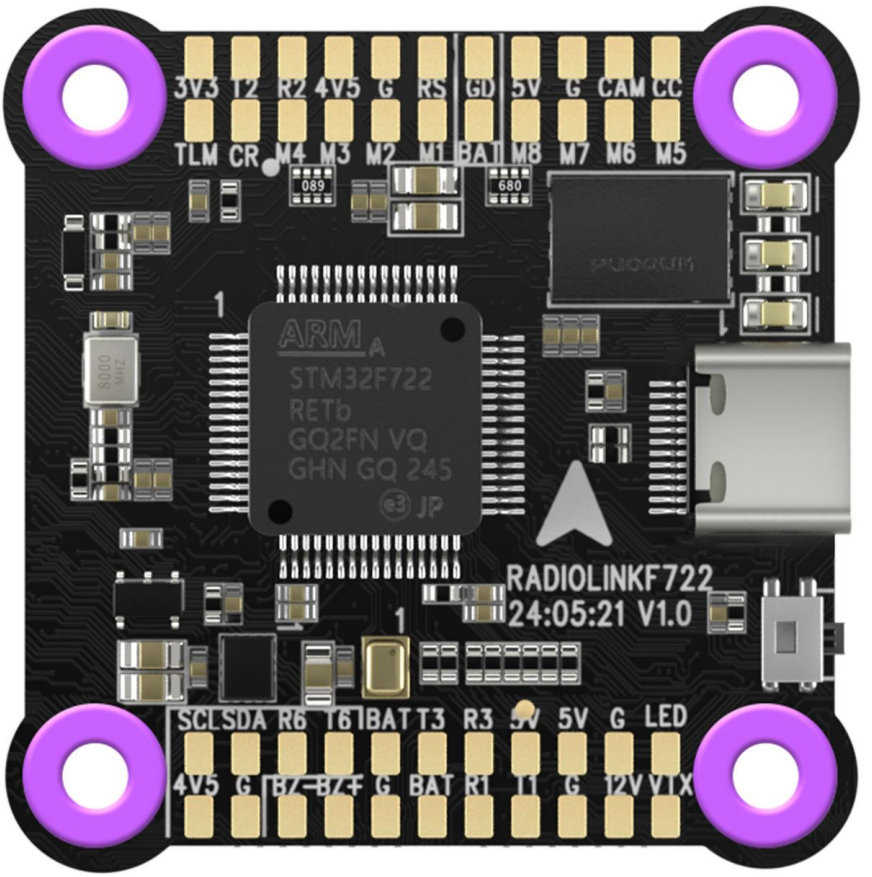
RadioLink

F722

User Manual



14+

Thank you for choosing RadioLink product. This product is not a toy and is not suitable for children under the age of 14. Adults should keep the product out of the reach of children and exercise caution when operating this product in the presence of children.

You can also download the manual of RADIOLINKF722 from https://www.radiolink.com/f722_manual_download

Read carefully and set the device as instructed. If there is any question, please send messages/ leave comments on Facebook and YouTube or send mails to after_service@radiolink.com.cn

Contact RadioLink RL
via Facebook Messenger

F722 Manual

Contents

Specifications

Weight & Dimension	Dimension	30.5*30.5mm(1.2″*1.2″)
	Weight	9.5g
Hardware	Processor	STM32F722RET6
Sensor	Gyro	ICM42688
	Barometer	BMP280/DPS310
	Blackbox	128MB, record and store flight logs
	OSD Module	AT7456E
Connector	Channel Output	M1 - M8
	HD Digital Video Transmission	Support HD digital video transmission plug-and-play
	Analog Video Transmission	Support analog video transmission plug-and-play
	Betaflight Camera Parameter Setup Soldering Pads	Support
	Battery Scale	110
	UART Port	5
	ESC Features	Support
	I2C	Support
	LED Strip	Support, with LED strip soldering pads
	Buzzer	Support, with buzzer soldering pads
	RSSI Output	Support, with RSSI soldering pads

	Firmware Type	Betaflight
	Firmware Name	RADIOLINKF722
	USB Port	1 (Type-C)
	RC In Signal Input	SBUS/CRSF
	OSD Telemetry	Support, OSD Module Integrated
	ESC Protocol	PWM, two-way DShot, and OneShot Protocol
	Input Voltage	3-6S
	BEC	3.3V/300mA; 4.5V/500mA; 5V/3A; 12V/3A
	12V BEC Switch	Support (USER1)
	Adaptable Models	2-8 axis multi-rotor including X8 models, Airplane, A-tail Quad, Bicopter, Custom Airplane, Custom Tricopter, Dualcopter, Flying-wing, Gimbal, Helicopter120, HEL+, HEX H, HEX X, OCTO FLAT+, OCTO FLAT X, OCTO X8, OCTO X8+, PPM to Servo, Quad+, Quad X, Quad X 1234, Singlecopter, Tricopter, V-tail Quad, Y4, Y6
	Operating Temperature	-30~85°

Package

F722(Flight Controller)*1

ESC Connect Cable*2

Camera Connect Cable*1

ELRS Receiver Connect Cable*1

Analog Video Transmission Connect Cable*1

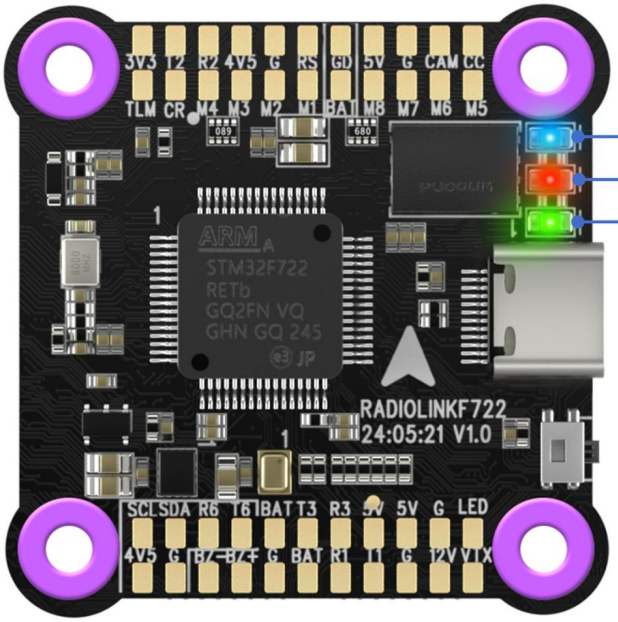
TS100 GPS Connect Cable*1

Receiver Connect Cable (3PIN)*1

R8SM Receiver Connect Cable*1

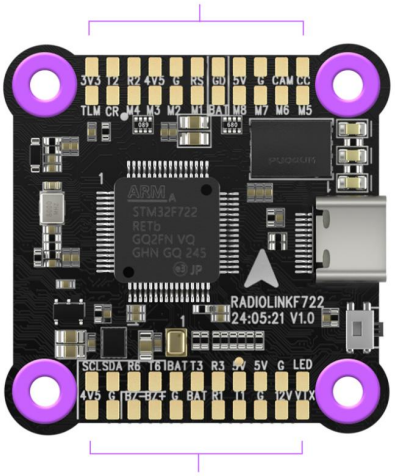
Package Box*1

LED Indicator



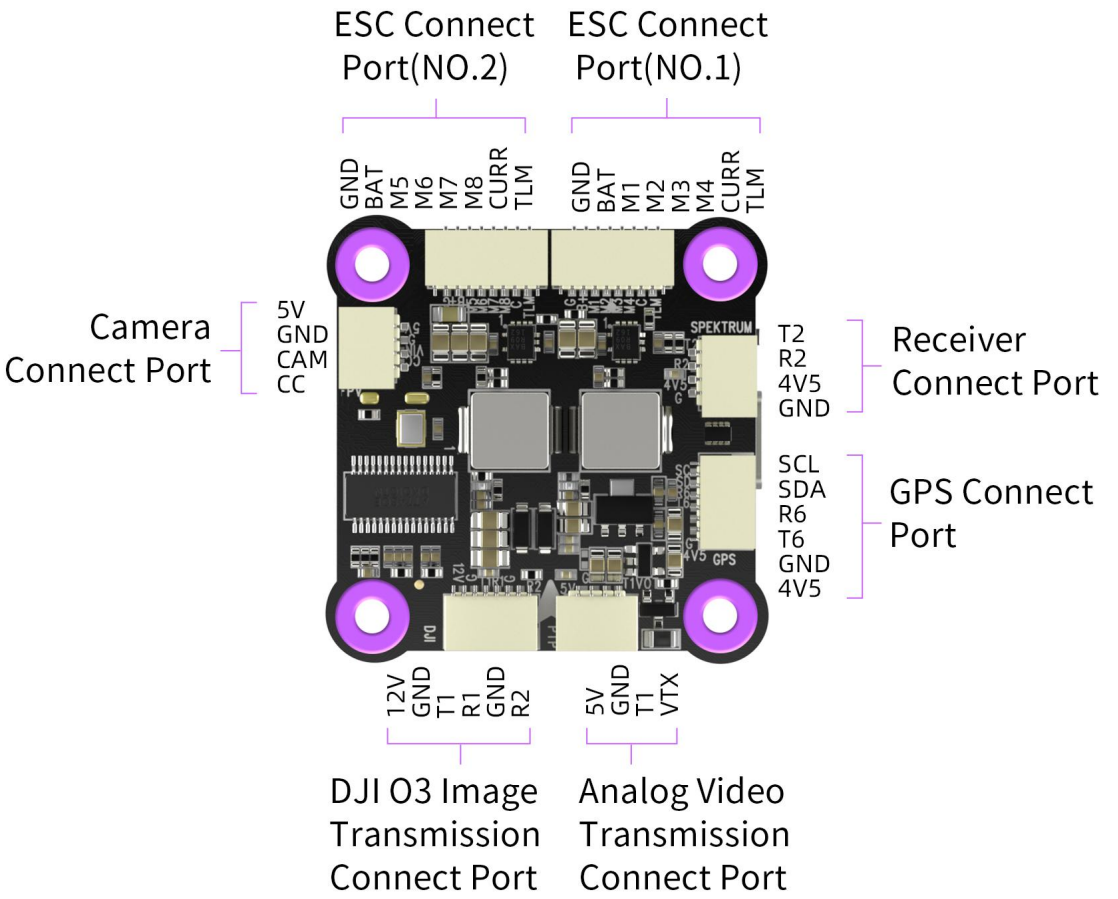
Soldering Pad Definition

Solder Pad: for ESC, Receiver, Camera



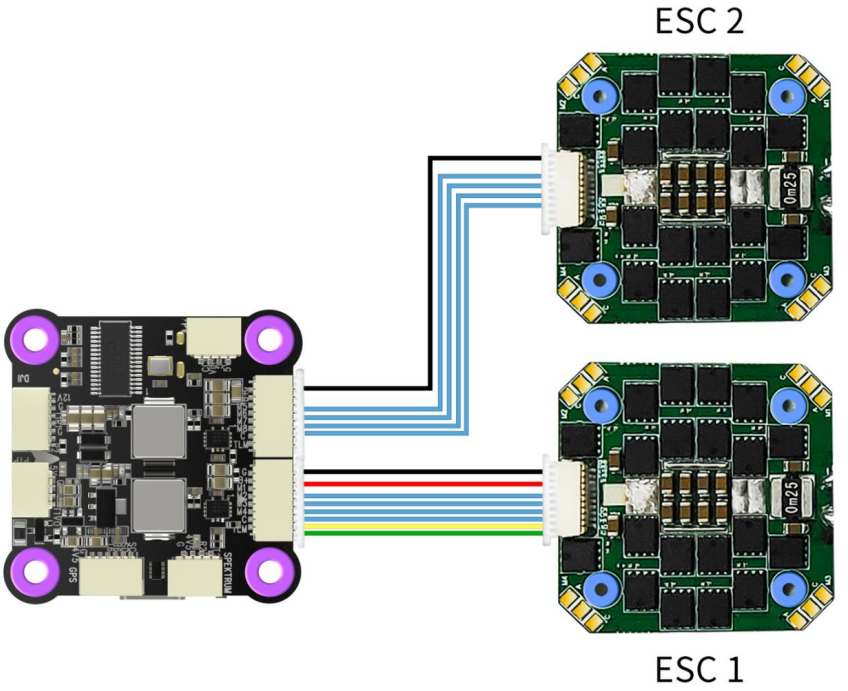
Solder Pad: for Buzzer, LED Strip, GPS, DJI HD Image Transmission, Analog Video Transmission

Socket Interface Definition



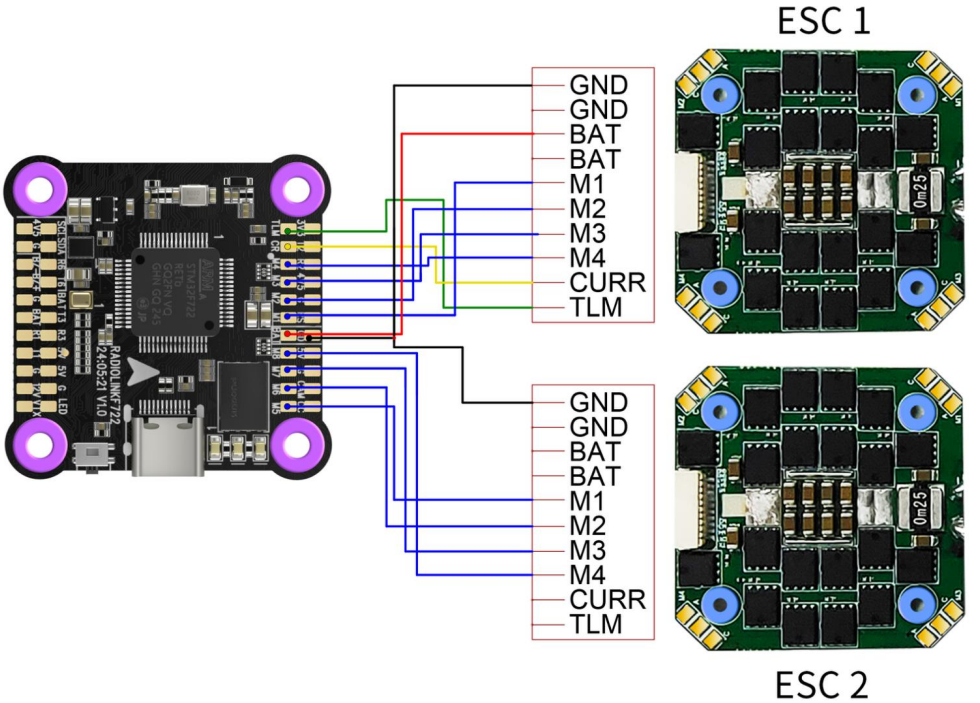
FC & ESC Connection

Method 1: All connectors



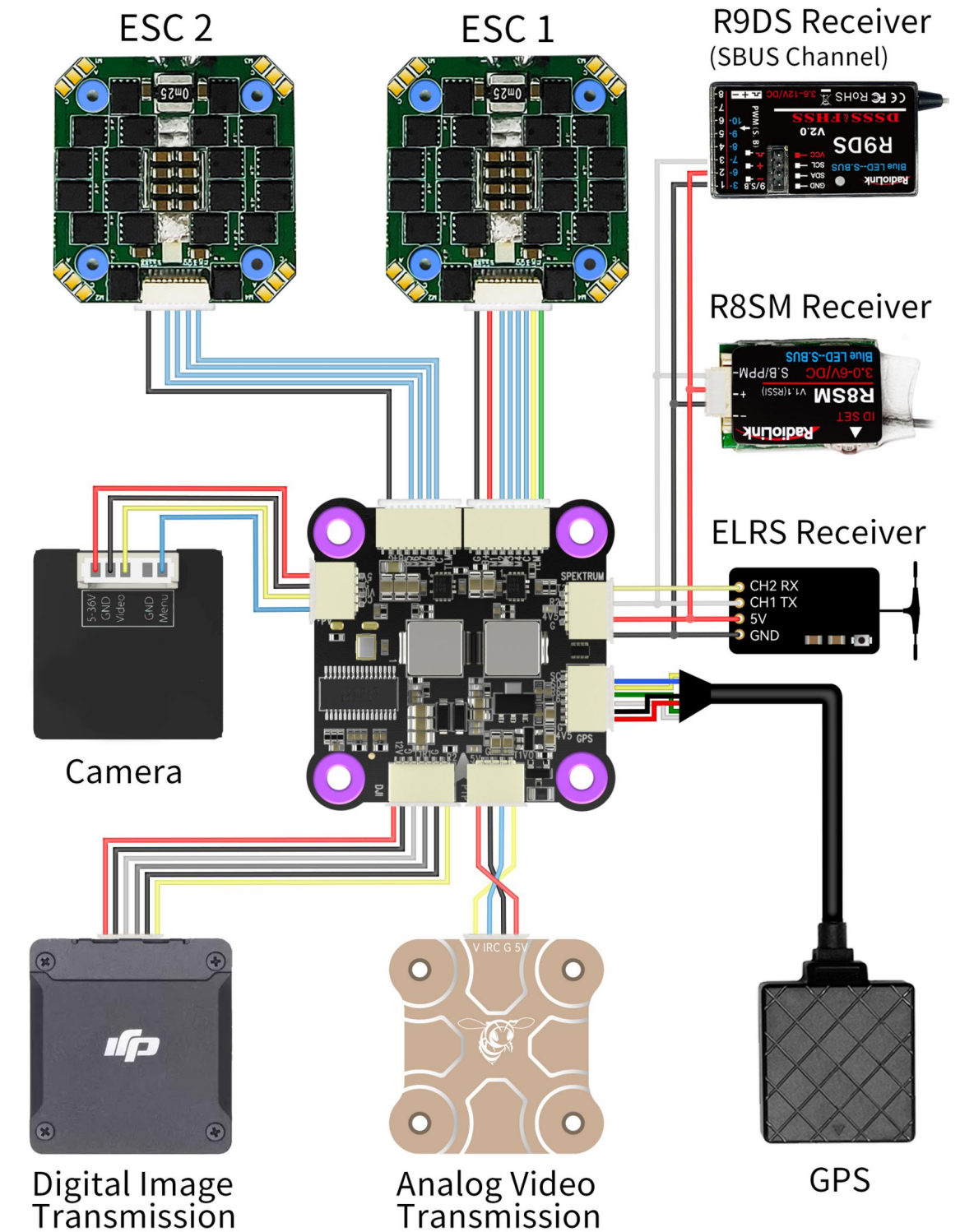
Note: When two ESCs are connected in this method, please disconnect the BAT, CURR, TLM cables for one of the ESC.

Method 2: Direct Soldering

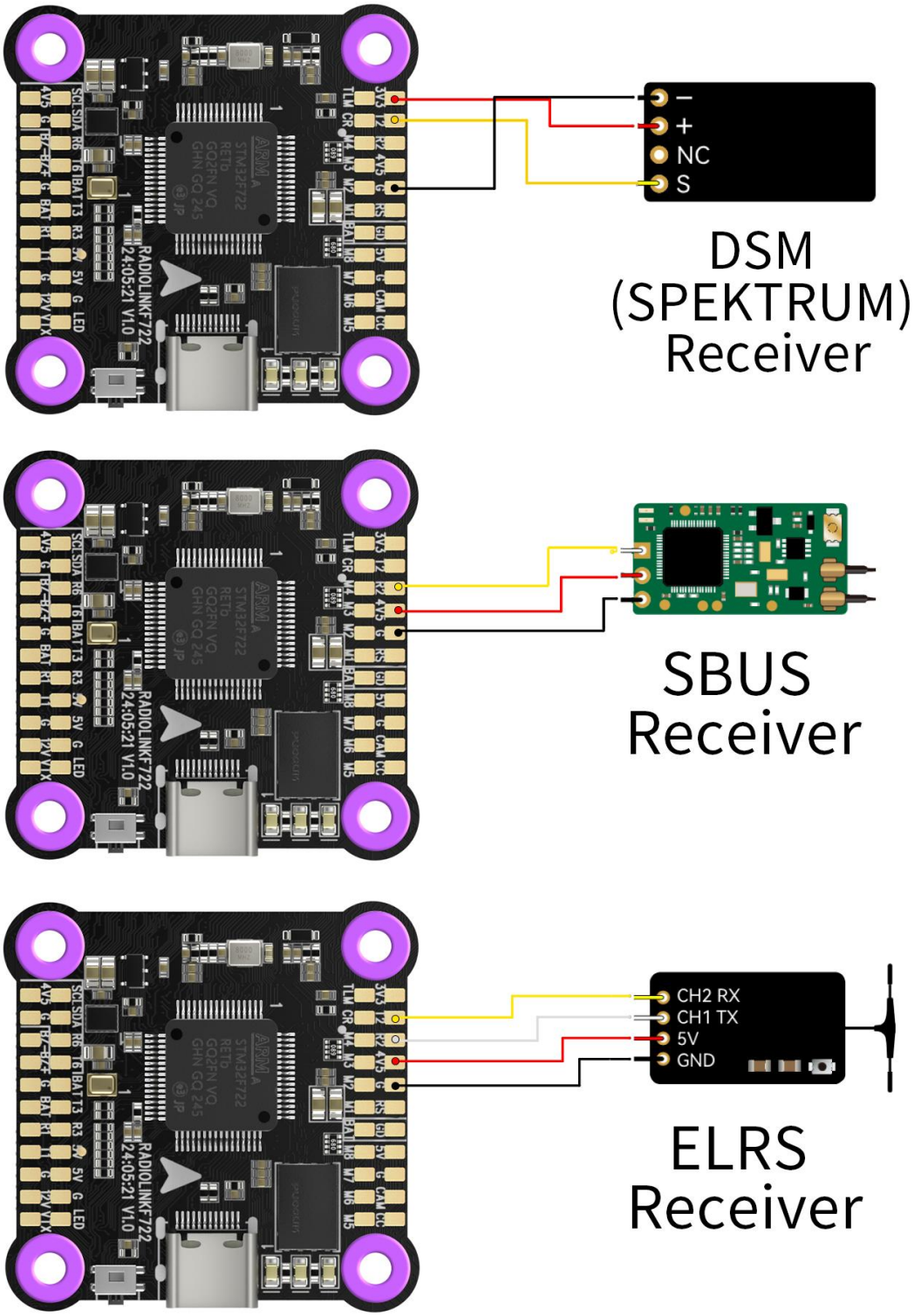


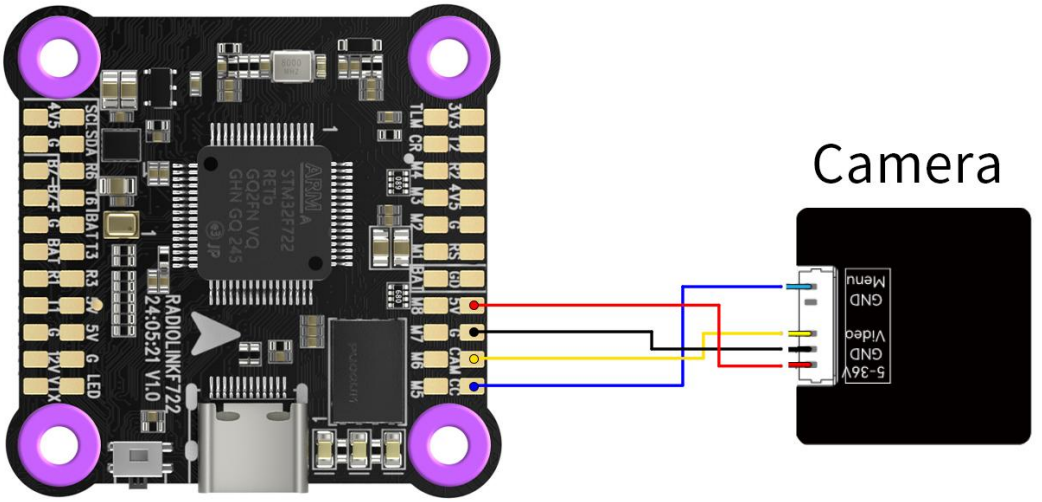
FC's Peripheral Connection

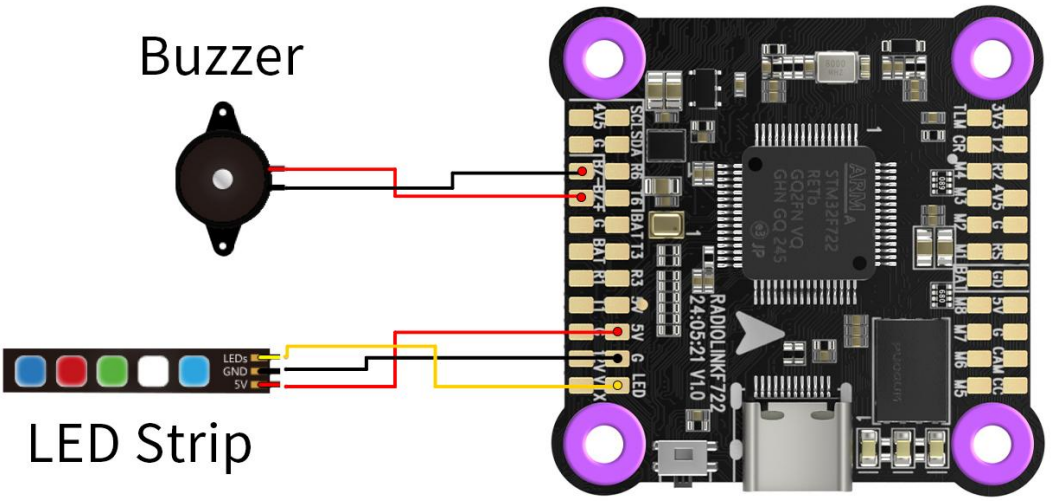
Method 1: All connectors

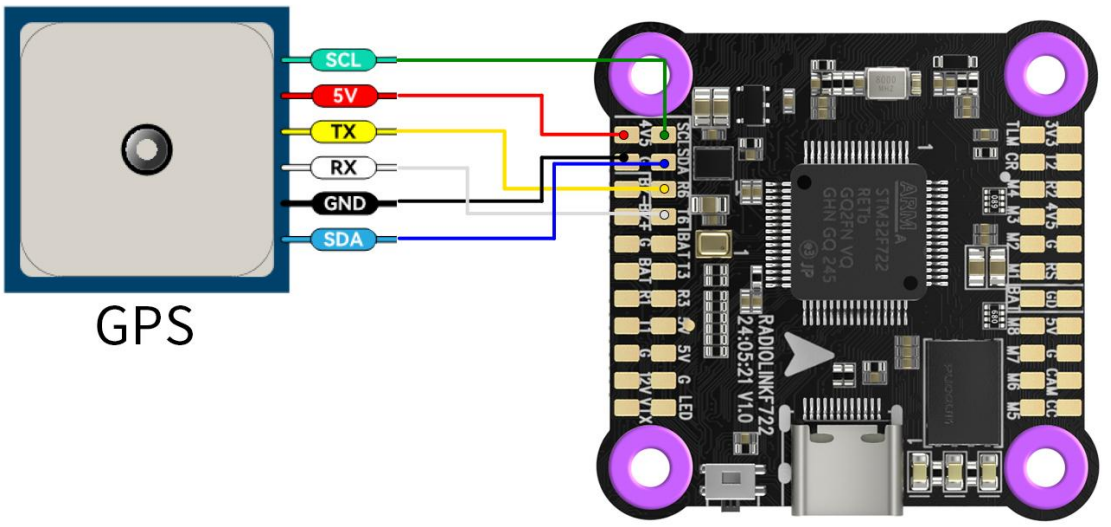


Method 2: Direct Soldering

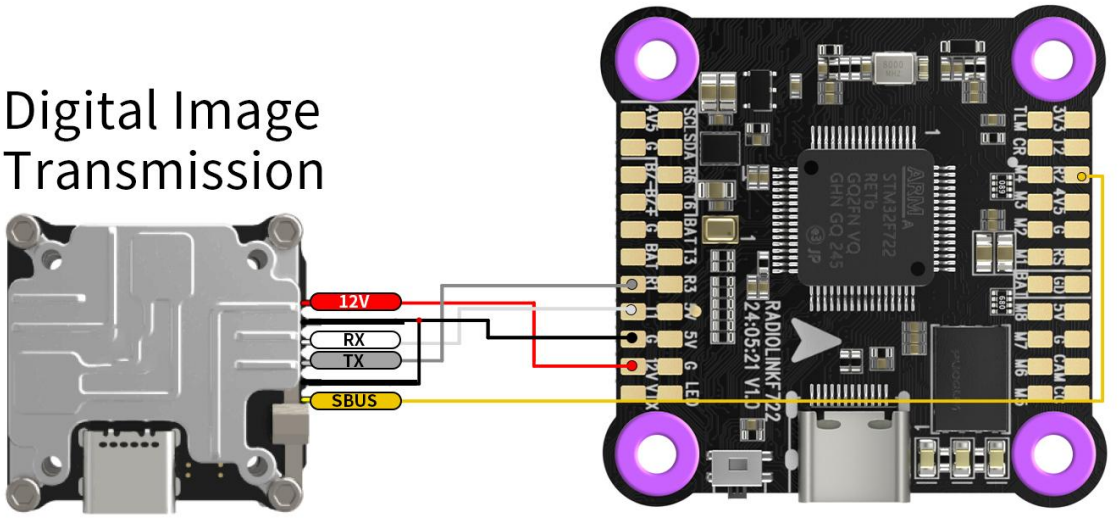



Camera
Menu
GND
Video
GND
5-36V


Buzzer
LEDs
GND
5V
LED Strip

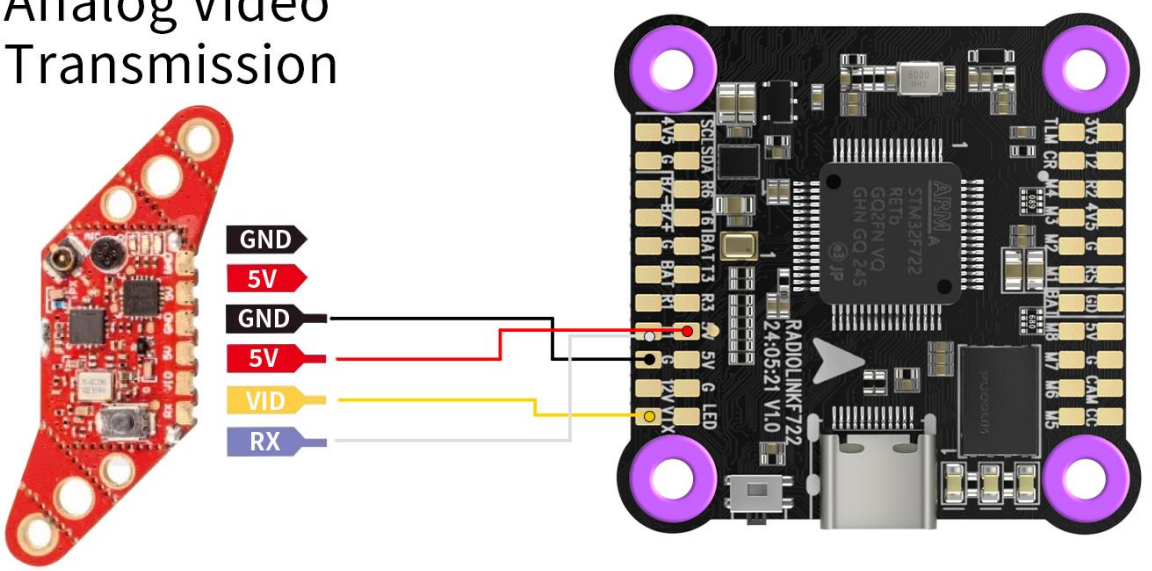

SCL
5V
TX
RX
GND
SDA
GPS

Digital Image Transmission



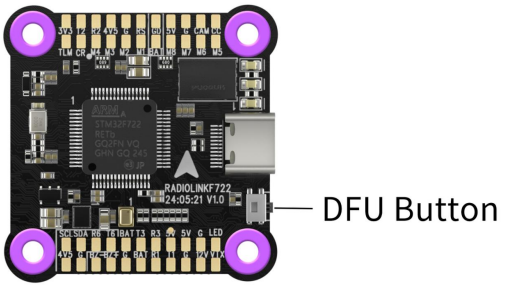
Note: when connecting DJI image transmission, the SBUS pin of DJI will occupy the R2 pin of F722. If DJI SBUS signal remote control is used, please disconnect the device on the R2 and T2 solder pad or on the receiver socket. If R2 and T2 solder pad or receiver socket are occupied to connect other receivers, please disconnect the DJI SBUS connection.

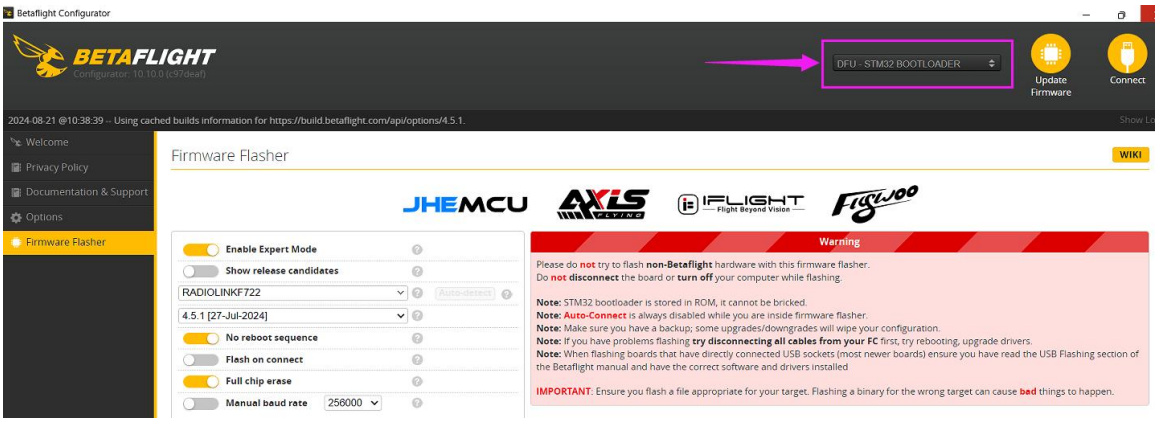
Analog Video Transmission



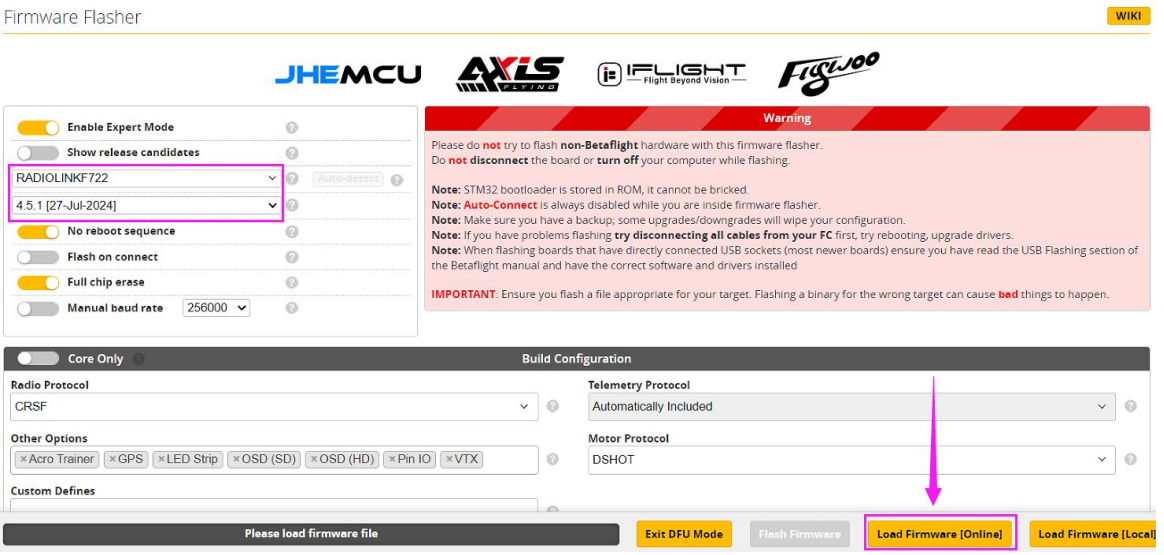
FC Firmware Update

(1) Long press the DFU button. At the same time, connect F722 to the computer with a USB cable. Betaflight Configurator will display the DFU mode (See picture below);

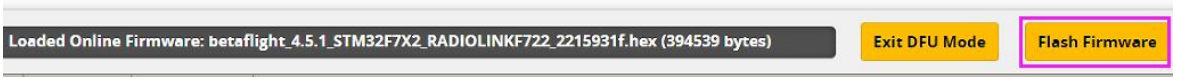




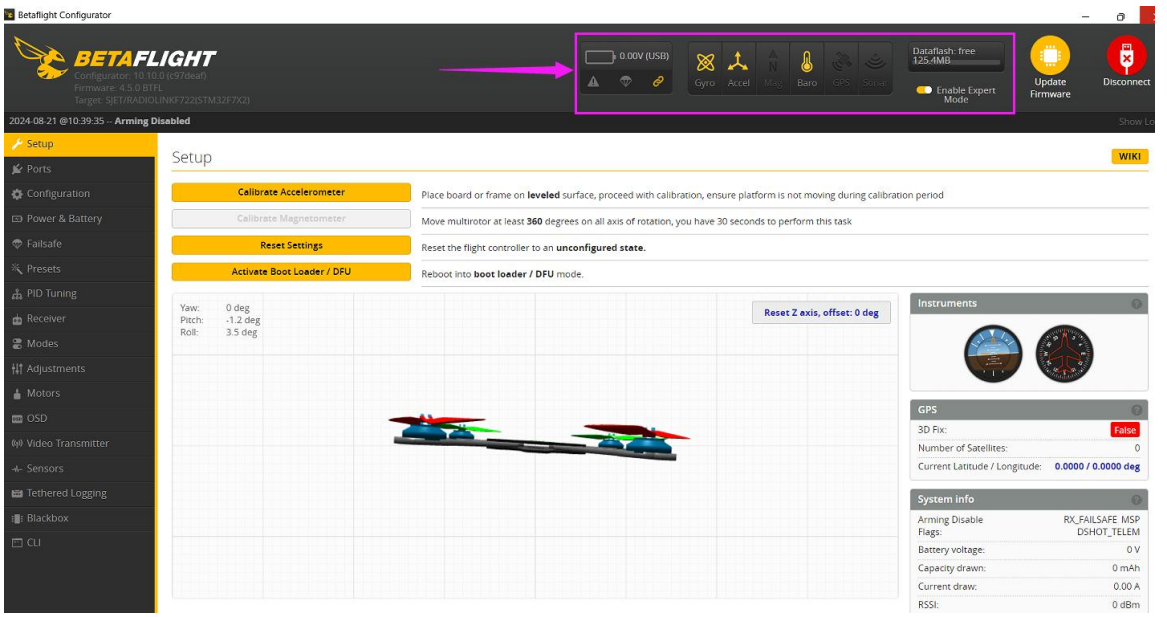
(2) Select RADIOLINKF722 and 4.5.1 firmware in Betaflight Configurator. Then click “Load Firmware [Online]”;



(3) After the firmware is loaded, click “Flash firmware”;



(4) After the firmware is flashed, connect it to Betaflight Configurator again. The icon of gyroscope, accelerometer, barometer and DataFlash will be displayed.



Installation of ESC and Capacitor

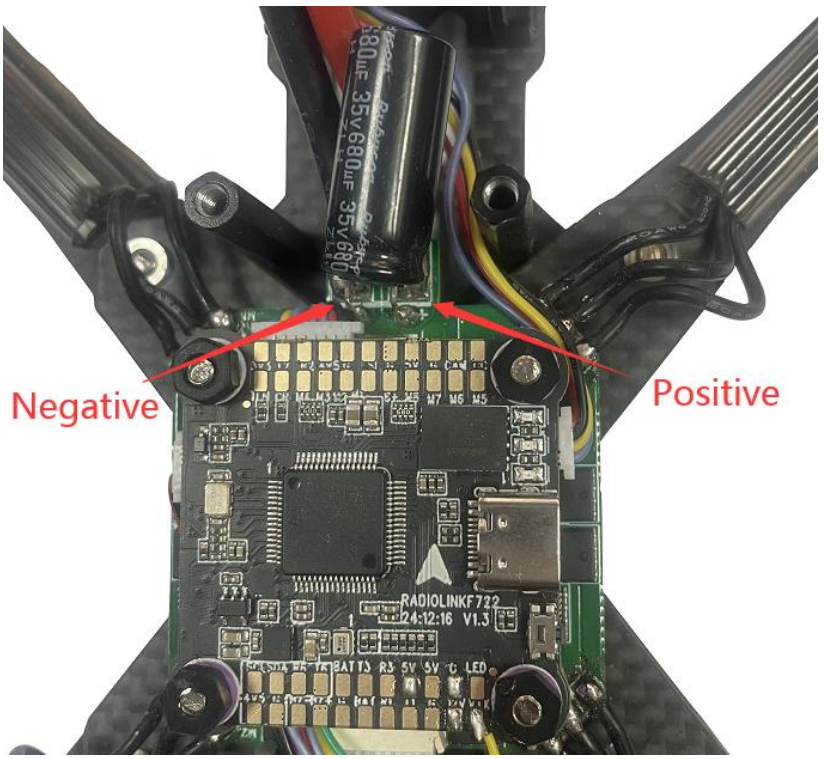
1. ESC Installation

The frame bottom plates of some racing and aerobatic drones are made of conductive materials by CNC technology. If they are not installed properly, the safety distance between the electronic components at the bottom of the ESC and the metal bottom plate may be insufficient. Due to the buffering effect of the fuselage shock absorber ball (or shock absorber bracket), when the aircraft encounters a collision or landing impact, the ESC may be displaced and directly contact the

bottom plate, causing a short circuit and damaging the ESC and flight controller.

2. Capacitor Installation

Please install the capacitor that comes with the ESC. Make sure there is no false soldering, otherwise the ESC and flight controller will be easily damaged when there is a crash. Solder the capacitors correctly to the red and black ends of the ESC battery cable. Remember not to solder the positive and negative poles of capacitor in reverse (As shown below).



Large capacitors significantly improve the reliability of the ESC under complex working conditions by stabilizing voltage, suppressing interference and providing instantaneous energy. They are important components to ensure the stable operation of the UAV power system. It is easy to damage the flight controller if ESC is not equipped with capacitors.

Specific functions of large capacitors

1. Stabilize power supply voltage: When the motor starts, accelerates or stops suddenly, it will consume a lot of current instantly, which may cause power supply voltage fluctuations. Large capacitors can quickly release stored energy, compensate for instantaneous current gaps, and avoid voltage drops.
2. Filter out high-frequency interference: The ESC controls the motor speed through high-frequency switching signals, which will generate current spikes and electromagnetic noise. Large capacitors can absorb high-frequency interference and reduce signal interference to the ESC and flight control system.
3. Protect electronic components: When the motor stops suddenly or stalls, it may generate instantaneous high voltage. Large capacitors can absorb such abnormal energy to prevent damage to the power tube (MOSFET) or power circuit inside the ESC.
4. Improve dynamic performance: When the flight attitude changes rapidly, the capacitor can serve as a temporary energy source to assist the ESC in responding to control commands quickly and ensure the continuity of the motor power output.